SUSTAIN-CE

SUSTAIN-CE PROJECT

Module 5 Sustainable Transportation Systems Syllabus

COMMON SYLLABUS FOR MODULES/ COURSE MATERIALS

Co-funded by the Erasmus+ Programme of the European Union

TÜRKİYE ULUSAL AJANSI
TURKISH NATIONAL AGENCY

SUSTAIN-CE Project

Output name: Module 5 Sustainable Transportation Systems Syllabus

Leading Partner:	IYTE

Document Revision History

Version	Date	Comment	Author(s)
1.0	14 January 2022	First Draft	IYTE
2.0	14 October 2022	Second Draft	IYTE
3.0	31 May 2023	Final Version	IYTE

This project has been funded with support from the European Commission. This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

COURSE MATERIAL SYLLABUS

Module Topic	Applicable Civil Engineering Area/Design Course	Module Code	Total Course Hour		University Credit	ECTS
Sustainable Transportation Systems	XXX	SUSTAIN-CE 05	**Theory** 3	**Practice** 0		3

Language of Instruction	English
Level of Course Material/Load Case/Module	☐Associate Degree (Short Cycle) ☒Undergraduate (First Cycle) ☐Graduate (Second Cycle) ☐Doctoral Course (Third Cycle)
Prerequisite Course (s)	N/A
Special Pre-Conditions of the Course	N/A

Course Coordinator		Mail: Web:
Course Instructor(s)		Mail: Web:
Course Assistant(s)/Tutor (s)		Mail: Web:

Purpose and Background	The primary purpose of this module is to raise awareness about the impact of transportation on sustainability. The training aims to leverage the learners' understanding of the sustainability-related aspects of transportation and the sector. The learners will be equipped with the fundamental knowledge that connects transportation engineering profession fields such as transportation planning, traffic management, and pavement engineering with sustainability and circular economy concepts.
Module Content	In this module, the implementation of sustainability concepts and circular economy principles in three major Transportation Engineering profession fields, Transportation Planning, Traffic Management, and Pavement Engineering, and their effect on the environment, economy, and society will be introduced.
Learning Outcomes of the Course Material/Case Study/Module	**Participants who complete this module will** 1. Define transportation planning considerations and address their relation to sustainability issues. 2. Recognize the barriers to sustainable transportation and describe the successful strategies to overcome these problems from a sustainability point of view. 3. Explain the travel demand management strategies and connect the potential outcomes of these approaches to sustainability issues. 4. List the problems in transportation and negative effects caused by transportation activities 5. Evaluate the importance of Intelligent Transportation Systems (ITS) for efficient use of the infrastructure under conditions that are changing by time and location. 6. Explain the pavement life cycle stages and can give sustainable consideration examples for each stage. 7. Associate pavement sustainability with context-sensitive factors such as Environmental Conditions, Traffic, Pavement Type, and Material Availability. 8. Illustrate pavement life-cycle activities and associate them with LCCA and LCA.

MODULE OUTLINE/SCHEDULE (In hours)			
Hours	**Topics**	**Preliminary Preparation**	**Methodology and Implementation (theory, practice, assignment etc.)**
3	Sustainable Transportation Planning	Recommended readings from the VLE	Theory, practice
3	Sustainable Traffic Engineering	Recommended readings from the VLE	Theory
3	Sustainable Pavement Engineering	Recommended readings from the VLE	Theory, practice

Required Material (s) /Reading(s)/Text Book (s)	Recommended readings in the VLE: Sustainable Transportation Systems
Recommended Material (s) /Reading(s) /Other	

ASSESSMENT		
Activities/ Studies	**NUMBER**	**WEIGHT in %**
Quiz	3	10
Assignment (s)	2	20
Project/ Final Project/ Dissertation and Preparation	1	35
Laboratory / Practice (Virtual Court, Studio Studies etc.)	N/A	0
Field Studies (Technical Visits)	N/A	0
Presentation/ Seminar	1	10
Examination/	1	25
Other (Placement/Internship etc.)		
TOTAL		**100**

ECTS (STUDENT/PARTICIPANT WORKLOAD)			
ACTIVITIES	**NUMBER**	**HOURS**	**TOTAL WORKLOAD**
Module Teaching Hours	3	3	9
Preliminary Preparation and finalizing of course notes, further self- study	3	2	10
Quiz and Preparation for the Quiz	5	3	15
Assignment (s)	N/A	N/A	N/A
Final Project/ Dissertation and Preparation	1	20	20
Practice (Laboratory, Virtual Court, Studio Studies etc.)	N/A	N/A	N/A
Field Studies (Technical Visits, Investigate Visit etc.)	N/A	N/A	N/A
Presentation/ Seminars	1	10	10
Examinations	1	10	10
Other (Placement/Internship etc.)	N/A	N/A	N/A
Total Workload	N/A	N/A	**77**
Total Workload/ 25	N/A	N/A	**2,96**
ECTS			**3**

Co-funded by the Erasmus+ Programme of the European Union